# INDEX

Page	1	Page
Abbot, John M.; The buried city of Ceylon 613	Bolivia, Commerce of	43
Africa, Diamond mines of 344	-, Country without a debt	47
-, New British Empire of the Sudan 241	-, The Mexico of South America	45
-, Wonderful strides of	—, Railroads in	430
Agriculture in South America	-, Women of. Bowen, E. H., referred to	64
- voyages by analogy	Branner, J. C., referred to	32
Alaska Breaking up of the Vukon 268	Branner, J. C., referred to	20
— gold fever 82	—, Development of	428
— gold fever	-, The New, Book on	364
-, How much is known of 112	Camp, The highest in the world	
-, Recent volcanic action in southeast 173	Brazilian Ambassador referred to Bridgman, Herbert L.; New British Empire of	26
-, Surveying in	the Sudan	241
Algeria	Brown, Chester, referred to	
America and the Orient	Brown, G. M. L.; Three old ports of the Spanish	
	main	622
-, Central, Books on	Bryan, Charles A, referred to	605
-, Commercial, in 1905	Bryant, Henry G., referred to	40
-, Discoverers and explorers of, Book on 364	Calderon, Ignacio, Summary of speech of	477
-, Investments of, in Cuba	California, Earthquake in 282,	325
-, North, Area of	Calvo, Joaquin Bernardo, Summary of speech by. Camp, The highest in the world	477
-, South 480	Camp, The highest in the world	647
, Agriculture in 455	Canada, Forests of	504
— —, Falls of Iguazu 456	-, Immigrants to	350
— —, Forestry in 459	-, Timber belts of	648
— — fifty years hence	Special department for magnetic survey	940
— , Manufacturing in	, Special department for magnetic survey established by	38
, Mineral resources of	Casasus, Joaquin D., Mexican Ambassador, Sum-	
— —, Missions in 459	mary of speech by.  Cassel, Sir Ernest, referred to.  Castro, President, referred to.  Castro, President, referred to.  631, Cattell, Edward James, Book on South America.	474
and the Monroe Doctrine 476	Cassel, Sir Ernest, referred to	244
— —, Panama to Patagonia	Cattell, Edward James, Book on South America	152
	Ceylon, Buried city of	613
— —, Railways of	Chadwick, Admiral, referred to	156
Amundsen, Roald, navigator of the Northwest	Champ, William S.; Address at annual dinner of	
	Ceylon, Buried city of. Chadwick, Admiral, referred to. Champ, William S.; Address at annual dinner of the National Geographic Society	35
Animals, Extinct, Review of	-, referred to	34
-, Marine and fresh-water, of Japan 524	Chapman, Robert H.; The deserts of Nevada and	4
Animal wealth of the United States	the Death Valley	484
Argentine, Fertile pampas of	the Death Valley Chester, Colby M.; The American Eclipse Expe-	
Arizona and New Mexico	dition	589
-, Salt River, Project in	-, referred to	
Arctic, The; Address by Anthony Fiala 32	Chili, Book on	
Arctic explorations, Amundsen 4, 38	China, American goods in	172
, Commercial profit from 4	-, Awakening of	500
	-, Open-door policy in	499
, Greely 4	-, Present conditions in; John W. Foster	651
, Northwest Passage	-, Reformation of education, penal code, etc., in.	653
Peary 40, 628, 640	Colorado River	38
— —, Wellman	Commercial traveler in South America	50
- , Zeigler expedition, referred to 32, 35	Congo, The, Book on	301
Ault, J. P.; Magnetic survey of Pacific Ocean	Future of	267
Austin, Florence M., Book reviews by	Cotidal lines for the world	303
	Coville, F. V., referred to	205
Austin, O. P.; Commercial America in 1905 452	Cromer, Lord, referred to	240
—, referred to 205	Cuba, Commerce of	540
D. 11 . C. 1 . T. 21 . D	—, Immigration into	568
Bailey, Solon I.; New Peruvian route to the	-, Labor in	539
plain of the Amazon	-, The Pearl of the Antilles	535
-; Latin America and Colombia	-, Its population	537
Bauer, L. A., Magnetic work of 237, 648	- Railroad in	58
Bauer, L. A., Magnetic work of	-, Railroad in	538
Bell, Alexander Graham; Our heterogeneous sys-	Culver, Henry S., Report on forests of Canada	
tem of weights and measures	by	509
Bell. Charles I. referred to	Darton, N. H., Letter from	202
-, referred to 24, 205 Bell, Charles J., referred to 24 Bell, Emily, Letter from 115 Bell, Dr Robert, quoted on area of Canadian	Davidson, George, referred to	325
Bell, Dr Robert, quoted on area of Canadian	Davis, S. P., referred to	548
forests 510 Belgium, Use of Nile banks 267	Davidson, George, referred to. Davis, S. P., referred to. Davis, William M., Paper by, referred to. Death Valley, The. Deserts of Nevada.	76
	Death Valley, The	483
- in the Congo	Deserts Of Nevada	183
Bigelow, F. W., placed in charge of meteoro-	Deserts, Renewed interest in the	104
logical work on Eclipse Expedition 504	Diamond mines of South Africa	144
Berbers, The	Diamond mines of South Africa	48
	Dogs used for transportation	78
ference, 1889	Dogs used for transportation. Durand, Book by Lady, mentioned. Durand, Sir Henry Mortimer, referred to	25
	AMERICA ON FIGHT MULLIMICT, PETERICA TO	49

# 716 THE NATIONAL GEOGRAPHIC MAGAZINE

Pa	age		Page
Dutton, Major, cited on waves generated by earthquake shocks		Goupil. M., referred to	20
Earthquake, California	325 280	Gooding, quoted on Idaho	534
-, Records of, in Washington	296	terial results.  —, Obiruary by.  —, referred to.	51
Geodetic Survey East, The Far, Book on Eclipse Expedition, American	589	—, Obituary by.  —, referred to. Griscom, Lloyd C.; "The Occident and the Orient;" Address at annual dinner of the	-
Eclipses, How caused	47	National Geographic Society	
Eichelberger, Professor, referred to	101	graphic Society	302
Exploration, Geographical, Early Dutch explorers.  — , Moral and material results of	3	—, Book reviews by	534
Fairchild, David; Our plant immigrants 1 Fellows, A. L., referred to	90	- Burning the roads	583
Ferber, Captain, referred to	32	-; Drifting across the Pole	424
-, referred to Fisheries, American whale, 1804-1876, United States Bureau of, referred to 5	35	-; Immigration into Cuba	531
Flashlight photographs of wild game	5	-; Luray Caverns; A modern Viking (Amundsen); Mount Vesuvius	38
Forestation	01	-, Notes by 37, 115, 203, 474, 479, 509, -; Ostrich farming in the United States; Paper from cotton stalks	712 569
Forests as revenues 5	33	-; Peary's Farthest North	638
of Canada		-, referred to	
Foster, John W.; Present Conditions in China. 6 Fremont, Gen. John C., referred to	90	Pole  —; The wonderful strides of Africa  —; The work on the Isthmus	176 586
Game, Photographing wild, with flashlight and camera	67	Grosvenor, Mrs Gilbert H., Book reviewed by Guild, Governor, Annual address 1906 quoted Gummere, Minister, referred to 156,	523 157
Gannett, Henry, Book reviews by 177, 301, 5  —, referred to	34	Gunnison tunnel	90 464
- Science 47, 48, 11 - Society, Norwegian, Award made by 5	24	Harris, R. A.; Cotidal lines of the world  -, referred to	302 640
Geographical problems.  Reader, Africa, Carpenter's.  Geographic Society, National, Address of Presidents	65	Hatteras Cane	210
Geographic Society, National, Address of President Moore at annual dinner, describing the Society and its work	23	Hay, John, referred to.  Hayden, F. V., referred to.  Hayes, C. Willard, referred to.  108,  Hayes, J. T.; Magnetic survey of the Pacific	205
— —, Addresses to 82, 108, 117, 179, 24 344, 367, 483, 498, 589, 6	II,	Ocean Hazlett, Dillwyn M.; Farming on the Isthmus of Panama	040
— — —, Annual excursion	58	Heilprin, Angelo; The shattered obelisk of Mont Pelee Heimbrod, G.; Magnetic observations in the	465
sentative of		Henry, A. I., referred to	648 205
, Meetings of 54, 116, 178, 24	14	Hersey, Henry E., Appointed representative of the National Geographic Society to accompany expedition to the North Pole	
, W. J. Peters appointed representative of the, and second in command on Ziegler Polar	38	Hervieu, Gaston, referred to	498 98
, Plans of Walter Wellman for reaching	32	Hitchcock, Ethan A., referred to	302 358 464
, Report of recovery of drift casks to 4, Representative of, on Ziegler Expedition referred to	40	Hubbard, Gardiner G., referred to	24 24 575
tion referred to	33	Hume, Douglas, Paper by, referred to Hydrology of the State of New York, Book on	176 364
Yukon 26 -; Transportation methods in Alaska 6 ibraltar 59 illa River Canal 9 illaert, G. K., referred to 32 ilacier, The Roosevelt 24 odard, Louis, referred to 205, 208, 209, 211, 21	68 69	Idaho, prosperity of	16
illa River Canal	5	Immigration, Canadian	356 431
odard, Louis, referred to205, 208, 209, 211, 21 old-fish	4 7	-, South American to the United States, Japanese	587

India Modern Pools on 524	Mitsukuri, K., cited on marine and fresh-water
India, Modern, Book on	animals of Japan
- projects 88 80 00 01 02 05 06	Moore Willis L., referred to 35, 205, 50
— projects	animals of Japan
— — —, Possibilities of development 108	Geographic Society
Isthmian Canal Commission, Work of. 56, 60, 64, 229	Morocco, Geographic and political conditions of. 11
Isthmian Canal: See Panama Canal.	— Good books on
Italian subjects, Books on 302	-, Notes on 15
Italy, Book on 533	-, Notes on
	-, Story of captivity by Ion Perdicaris 11
Jagger, Thomas Augustus; Eruption of Mount	Morris, Charles, Book on the discoverers and ex-
Vesuvius 318	plorers of America 36
Jamaica mine workers employed in Panama 64	Morrison, H. S., Book of South America
Japan, America, and the Orient	Morse, Fremont, Report of, cited
-, Cultivation of marine and fresh-water animals	Moth, Brown-tail
-, Industrial and commercial delopment of 501	-, The gypsy 40
	Nansen expedition referred to 40, 21
— influence in China	Nabuco, Joaquim, Summary of speech by 47
Jesup, Morris K., referred to	Neaves, Grenville, referred to
Jesuits as civilizing agency in South America 460	Nevada, Life in Goldfield
Julliot, Henri, referred to	- Truckee-Carson works in
Jungle trails and jungle people	-, Truckee-Carson works in
Junger trans and Junger properties.	New Mexico Arizona and
Vanna Carin anna of	-, Population of, in 1906. 10.  Nicholson, Sir Arthur, referred to 15.  Noonan, Representative, cited on tariff 51.  Norris, Captain John A., referred to 599, 61.  North Carolina coast. 31.  Noyes, Frank B., referred to 20.
Kansas, Grain crops of	Nicholson, Sir Arthur, referred to
of South America	Noonan, Representative, cited on tariff 51
of South America	Norris, Captain John A., referred to 599, 61
Kirkland, A. H., referred to 464	North Carolina coast
Kitchener, Lord, referred to	Noyes, Frank B., referred to 201
Knabenshue, Roy, referred to	
Korea, Extract from book on	Occident and Orient, The; Address by Lloyd C.
2,3	Griscom 2 Oklahoma, Big. 10 Oklahoma, Company 10 Oklahoma, Dig. 10
Labrador 364	Oklahoma, Big
Labrador	, Vote of 10
Lacroix, Hypothesis of origin and construction of Mont Pelee by	Okanogan project
Mont Pelee by 472	Omori, F., sent by Japanese government to San
La Gorce, John O., Book reviews by 301,	Francisco 325
364, 426, 588	Orient, Future of the
Laguna Dam 92	C. Griscom
Lancaster, E. Ray, referred to	Ostrich farming in the United States 569
Land of the rising sun, Review of 49	Ostricii rarining in the Office States 509
Land of the strenuous life, Review of 48	Pacific Coast rising 286
Land of the strenuous life, Review of	- Ocean, Magnetic survey of
Largelamb, H. A.; Extinct reptiles found in	Pampas of Argentine
nodules	Panama, Book on 588
Laurier, Sir Wilfrid; The forests of Canada 504	— Canal. The 55
- referred to	— —, Book on 534
-, referred to	— —, Laborers for 58
Lawson, Victor, referred to 205	— —, Notes on the 362
Lee, Joseph, Report concerning immigrants to	— referred to
Founder 587	-, Farming on the Isthmus of 229
Leopold, King, Reign of, referred to 265	-, Eight-hour law in, an extravagance
Leuschner, A. O	-, Foreign labor in 58
-, referred to 298, 299	to Patagonia, Books on, referred to
Lippincott's Gazeteer, Review of	Pepper
Liwenthaal, Alexandre, referred to 207, 214	—, Work on the Isthmus of
Livingstone, David, Results of explorations 3	Pan-American conferences
Lockyer, Sir Norman, cited on eclipse 612	Pan-American conferences
Louisiana, Book on	courage the 479
Luray Caverns	— referred to 427
230	- Congress mentioned 203
McGuire, Bird S.; Big Oklahoma 102	Park systems, American, Book on 534
McKinley, William, referred to	Pathfinder dam
McKinley, William, referred to	Pearl oyster 529
Manufacturers' Association referred to 58 Martyn, H. E.; Magnetic survey of Pacific	Pearson, J. C.; Magnetic survey of Pacific Ocean. 648
Martyn, H. E.; Magnetic survey of Pacific	-, referred to
Ocean 648	Peary, Robert E., Arctic work of
—, referred to. 237 Marvin, C. F.; The record of the great earth- quake written in Washington by the seismo- graph of the United States Weather Bureau 296	-, Success in reaching "Fartnest North" 638
Marvin, C. F.; The record of the great earth-	-, referred to
quake written in washington by the seismo-	Pepper, Charles M.; South America fifty years
Messachusetts Efforts to check rayages of green	hence
Massachusetts, Efforts to check ravages of gypsy moths 463	Perdicaris, Ion; Morocco, "The land of the ex-
- Prosperity of	treme west"
Matteuci, Dr. referred to	—, referred to 108
-, Prosperity of	-, Mrs Ion, referred to 141, 146, 147
Merriam, C. Hart, referred to	Peru 449
Merrian, G. A., referred to 503, 507	—, Brazil and 253
Meriwether, Colyer, Book reviews by 47, 48	-, Commerce of 432
Mexico. Books on	-, A new route to the plain of the Amazon 432
Miller, J. M., referred to	-, A silver table standing on legs of gold 478
Milne, John, cited on earthquake shocks 281	Peters, W. J., entrusted with command of yacht
Minidoka project	Galilee 237
Mining in the United States 101, 114, 483	-, Magnetic survey by 648
Missions in South America 459	—, referred to 32, 33, 35

# 718 THE NATIONAL GEOGRAPHIC MAGAZINE

	Pag	ge		Pag
	Philippines, Charting of the	12	Southard, James H., chairman of Committee on Coinage, Weights and Measures	16
	Pine forests disappearing	79	Statistics, Bureau of, cited on commerce of Cuba. Stonewall Flat, The	16
	Polo Brothers.  Popham, John N., referred to. 6 Porter, Russell W., referred to 3 Porto Rican prosperity. 71 Portugal, Geographical explorations of	4	Bridgman Sugar-heet culture Surcouf, Edward, referred to	16
	Portugal, Geographical explorations of. Preston, W. T. E., cited on immigration. 35 Provence, Old, Book on. 30 Putnam, Harrington, referred to. 64	3 6 I	Taft, William H.; Address at Habana	25
	Rabot, Charles, Paper by, referred to	7	—, referred to	302
	Rafter, George W., Book on the hydrology of the State of New York		Testimony of an American business man who	525
	the elements. 201 Ransome, Frederick Leslie; Cause of San Francisco earthquake. 280, 325 Reclamation service, Letter from President Roose-	5	lived 16 years in Panama Tibet and Turkestan, Book on Tides, Range of. Tittmann, O. H., referred to 110, 173, 205,	307
	velt on. 64: —— law	3	Transvaal, Gold fields of	
	— —, Summary of work by	5	— coal fields  — commerce with Cuba  — exportation of leather goods.	101 540 521
	Renard, Commandant, referred to	5	, Greatest industry of the	513 25 531
	Revelstoke, Lord, referred to	3	, Petroleum output of the	114
	Roosevelt, President, cited on Panama Canal. 60, 63  —, Letter to Congress of Engineers on irrigation and forestry	3	— —, Sheep and wool industry of the — —, Table of comparative values of industries of the — —, Tin consumed by the	
	Names 177, 588  —, referred to		— —, Wealth per capita of the leading cities of the	523
	Roosevelt Dam		Valparaiso Van Horn, William, referred to. Varley, Cromwell, referred to. Vesuvius, eruption of.	58 141
	Rubinow, I. M., referred to.       580         Russell, I. C., referred to.       302         Russia's wheat surplus.       580		—, Mount Volcanoes 278, —, Books on 278,	165
	Rutherford, Ernest B., cited on radium		Warren, Frances E.; Animal wealth of the United States Washington Post, referred to	64
	San Francisco earthquake		Washington State, Okanogan project. Weights and measures, Our system of 1 Wellman, Walter; The Polar airship 2 expedition to the North Pole 205, 7	805
	Santos-Dumont, referred to.       208, 217         Scidmore, Miss Eliza R., referred to.       648         -; Greatest hunt in the world.       673         Scott, Charles F., Address by.       20		Wright, Luke E., referred to.	27
	Scott, Charles F., Address by		—; The Falls of Iguazu	144
	Setion-Infompson, Ernest, referred to		Wilson-Gorman act, Experience of United States under	17
			Workman, Mrs Fanny B. Ascents in Himalayas	38
	Smith, Tangier, referred to			76 90 90 92
,	—, Interest of King in visit of American astronomers	1	Yakima Valley	98
В	Spanish explorers.       3         — main, Old ports of.       622         Seeger, Eugene, cited on Brazil       203         Soddy, Frederick, referred to.       203	2	Ziegler expedition referred to	68
	203	4	Zeppelin, Count, referred to	7





#### THE

# NATIONAL GEOGRAPHIC MAGAZINE

#### AN ILLUSTRATED MONTHLY

EDITOR : GILBERT H. GROSVENOR

#### ASSOCIATE EDITORS

MAJOR GENERAL A. W. GREELY U. S. Army

W J MCGEE

Chief Department of Anthropology and Ethnology, Louisiana Purchase Exposition

C. HART MERRIAM

Chief of the Bureau of the Biological Survey, U. S. Department of Agriculture

WILLIS L. MOORE

Chief of the Weather Bureau, U.S. Department of Agriculture

O H. TITTMANN

Superintendent of the U.S. Coast and Geodetic Survey

O. P. AUSTIN

Chief of the Bureau of Statistics, Department of Commerce and Labor

DAVID G. FAIRCHILD

Agricultural Explorer of the Department of Agriculture

ALEXANDER GRAHAM BELL Washington, D. C.

DAVID T. DAY

Chief of the Division of Mineral Resources. U. S. Geological Survey

ANGELO HEILPRIN

Academy of Natural Sciences, Philadelphia

R. D. SALISBURY

University of Chicago

G. K. GILBERT

U. S. Geological Survey

ALEXANDER MCADIE

Professor of Meteorology, U. S. Weather Bureau, San Francisco

ALMON GUNNISON

President St Lawrence University

#### VOL. XVII—YEAR 1906

Published by the National Geographic Society Hubbard Memorial Hall Washington, D. C. WASHINGTON, D. C.
PRESS OF JUDD & DETWEILER, INC.
1906

#### CONTENTS

	Page
Geographical Exploration: Its Moral and Material Results; by General A. W.	
Greely, Chief Signal Officer, U. S. A	
The Florida Keys; by John Gifford	
Prosperous Idaho: An interview with Governor Gooding, of Idaho	
The Annual Dinner of the National Geographic Society	
A New Department	
A Modern Viking	38
Drifting across the Pole	
The Blue Crab	46
Geographic Literature	47
"The Effects of Tropical Light on White Men" (Maj. Charles E. Woodruff, Sur-	
geon U. S. A.)	47
"Extinct Animals" (E. Ray Lancaster)	48
"In the Land of the Strenuous Life" (Abbe Felix Klein)	48
"The Land of the Rising Sun" (Gregoire De Wollant)	49
"A Commercial Traveler in South America" (Frank Wiborg)	50
"With Flashlight and Camera"	50
"The Indian Dispossessed" (Seth K. Humphrey)	50
Obituary (Von Richtofen)	51
Correspondence	51
National Geographic Society	54
The Panama Canal; by Hon. Theodore P. Shonts, chairman of the Isthmian Canal	
Commission	55
Transportation Methods in Alaska; by Captain George S. Gibbs	69
Winning the West; by C. J. BLANCHARD	82
Arizona and New Mexico	101
Big Oklahoma	103
The Isle of Pines.	105
The People of Morocco	110
	112
How Much is Known of Alaska	
Correspondence	114
National Geographic Society.	115
Morocco, "The Land of the Extreme West;" by Ion Perdicaris	117
	157
	157
	158
	170
	170
	173
	173
	176
	177
	177
	177
	177
	78

#### IV THE NATIONAL GEOGRAPHIC MAGAZINE

	Page
National Geographic Society	178
Our Plant Immigrants; by DAVID FAIRCHILD, Agricultural Explorer, in Charge of	
Foreign Explorations	
Modern Transmutation of the Elements; by Sir William Ramsay	
Brazil and Peru	,
Walter Wellman's Expedition to the North Pole	
The Polar Airship; by Walter Wellman	
Farming on the Isthmus of Panama; by DILLWYN M. HAZLETT	229
An Interesting Photograph	237
Magnetic Survey of the Pacific Ocean; by L. A. BAUER	237
"Tibet and Turkestan" (Oscar Terry Crosby)	239
The Roosevelt Glacier	240
National Geographic Society	240
The New British Empire of the Sudan; by Herbert L. Bridgman	241
The Breaking up of the Yukon; by Captain George S. Gibbs	268
Mount Vesuvius	272
The Probable Cause of the San Francisco Earthquake; by Frederick Leslie Ransome	280
The Record of the Great Earthquake Written in Washington by the Seismograph of the	
U. S. Weather Bureau; by C. F. MARVIN	296
The San Francisco Earthquake of April 18, 1906, as Recorded by the Coast and Geodetic	
Survey Magnetic Observatories; by L. A. BAUER and J. E. BURBANK	298
Geographic Literature	301
"The Republic of Chili" (Marie Robinson Wright)	301
"The Congo" (a Report of the Commission of Inquiry)	301
"Old Province" (Theodore A. Cook)	301
"The Philippine Experiences of an American Teacher" (William B. Freer)	301
Books on Italian Subjects	302
Letter from N. H. Darton	302
Annual Excursion of the National Geographic Society	302
Cotidal Lines for the World; by R. A. HARRIS	303
Where the Wind Does the Work; by COLLIER COBB	310
The Eruption of Mount Vesuvius; by THOMAS AUGUSTUS JAGGAR, JR	318
The California Earthquake	325
The Diamond Mines of South Africa; by GARDINER F. WILLIAMS	344
Canadian Immigration	356
Photographs of Wild Game	358
The Luray Caverns	358
Notes on the Panama Canal	362
Notice to Members	364
Letter from H. A. Largelamb	364
Geographic Literature	364
"Hydrology of the State of New York" (George W. Rafter)	364
"The New Brazil" (Marie Robinson Wright)	364
"The Discoveries and Explorers of America" (Charles Morris)	364
Photographing Wild Game with Flashlight and Camera; by George Shiras, Third	367
South America	424
Growth of Florida	424
The Golden Trout	424
Restocking our Rivers and Waters with Fish	424
Paper from Cotton Stalks	425
The Skeleton in Luray Cave	425

CONTENTS	V
	Page
Geographic Literature	426
"Rise of the New West" (Frederick Jackson Turner)	426
"Statesman's Year-Book" for 1906	426
"Hints to Travelers"	426
South America Fifty Years Hence; by Charles M. Pepper	427
A New Peruvian Route to the Plain of the Amazon; by Solon Bailey	432
From Panama to Patagonia	449
Commercial America in 1905; by Hon. O. P. Austin	452
The Fertile Pampas of Argentine	453
The Falls of Iguazu; by Marie Robinson Wright	456
The Gypsy Moth	461
The Shattered Obelisk of Mont Pelée; by Prof. ANGELO HEILPRIN	465
What the Latin American Republics Think of the Pan-American Conferences	474
Reasons Why the United States in Particular Should Encourage the Pan-American	
Conferences	479
Good Books on Mexico, Central and South America	480
The Deserts of Nevada and the Death Valley; by Robert H. Chapman	483
Japan, America, and the Orient; by Hon. EKI HIOKI	498
The Forests of Canada; by Sir Wilfrid Laurier	504
The Vast Timber Belts of Canada	509
Animal Wealth of the United States; by Hon. Francis E. Warren	511
Cultivation of Marine and Fresh-water Animals in Japan; by K. MITSUKURI	524
The Lumber Business of the Government	531
A Polar Map	533
Geographic Literature	533
"Elements of Geology" (Prof. W. H. Norton)	533
"Italy" (W. Deecke)	533
"The Philippine Islands, 1493-1898"	534
"Modern India" (William Eleroy Curtis)	534
"Problems of the Panama Canal" (Brig. Gen. Henry L. Abbott)	534
"American Park Systems" (Andrew Wright Crawford)	534
"Rhode Island" (Irving Richman)	534
"Louisiana" (Albert Phelps)	534
"American Commonwealths"	534
Good Books on the West Indies	534
Cuba—the Pearl of the Antilles	535
The Immigration into Cuba	568
Ostrich Farming in the United States	569
The Passing of Korea	575
	580
	583
	586
	587
	587
	587
	588
	588
	588
	589
The Buried City of Ceylon; by John M. Abbor	613

### VI THE NATIONAL GEOGRAPHIC MAGAZINE

	Page
Farthest North	638
Two Great Undertakings	645
The Highest Camp in the World	647
Announcement	648
Recent Magnetic Work by the Carnegie Institution of Washington	648
Program of Meetings of the National Geographic Society, 1906–1907	649
Present Conditions in China; by Hon. John W. Foster, formerly U. S. Secretary of State	651
The Greatest Hunt in the World; by Eliza Ruhamah Scidmore, Foreign Secretary of	
the National Geographic Society	673
Latin America and Colombia; by Hon. John Barrett, United States Minister to	
Colombia	692
Prosperous Porto Rico	712
The Wellman Polar Expedition	712
Highest Camps and Climbs; by Edwin Swift Balch	713
National Geographic Society	714

#### LIST OF ILLUSTRATIONS

	rag
Map of South Florida	
Sponges drying on the wharf at Key West	
Green turtle on the wharf at Key West	
"On Elliott's Key"	1
The grape fruit, or pomelo	
On the mainland of Biscayne Bay at Cocoanut Grove	7
In the hammock. 2. A mangrove swamp. 3. Shows the character of the wall built	
of coral rock. 4. Drilling a hole in the coral rock to blast a hole for a grape-fruit	
tree. 5. Seminoles coming in from the Glades with venison; shows also a rock road.	
6. A thrifty camphor tree	1:
Old plantation on Elliott's Key	1
Seminole Indians in their dug-outs near Miami	L
Alligator eggs and young alligators just hatched in the glade back of Miami	I
Monasteries of the air: The only way of reaching	1
Ascending to the monastery of the air	18
Another view of a monk ascending to the monastery of the air, Greece	10
View of a pigeon farm at Los Angeles, California	20
Another view of the pigeon farm at Los Angeles, California	2
Outline map to show Amundsen's route; also conjectural route of the drift cask picked	
up on the coast of Iceland	39
Amundsen's ship	40
Eskimo women from Cape Fullerton, the extreme north end of our continent	43
Russian soldiers	42
A group of Russian peasants	43
A group of young Russian peasants	44
Types of Russian workingmen	45
Factory children in South Russia	46
Harbor of Rio	49
Plowing up salt in the Sea of Salton	52
Cottages built for married employees at Cristobal, Panama	61
A typical hotel for canal employees at Corozal	62
Cottages for married employees at Corozal	63
Fumigating force, Panama	66
Opening of Panama waterworks system, July 4, 1905	67
"Foxy"	68
Horse sleds delivering supplies along the trail between Valdes and Copper River	70
Soldiers of the United States Army dragging a sled through soft snow	70
U. S. Army steamboat laid up for winter on a sandbar.	71
Signal Corps repair men from U. S. telegraph office, with dog-team, out on repair trip.	72
Skaguay, seaport town of southeastern Alaska	72
Signal Corps dog-team	73
A typical picture of an Alaskan prospector with his dog-team	73
Indians traveling by dog-team on Yukon River	73
A phenomenal dog-team	73
Indian basket sled of Central Alaska	74
ndian birch bark canoe	74
Traveling by dog-team in Alaska	75

### VIII THE NATIONAL GEOGRAPHIC MAGAZINE

	Page
Seals	7
Feeding the dogs	7
Reindeer	
Going out on the ice for whales in April	
Hauling supplies to whale ships on the Arctic coast of Alaska	8
At work on one of the ditches of the Truckee-Carson project in Nevada	8
One of the canals of the Truckee-Carson project, Nevada	8
Opening one branch of the Truckee-Carson system	8
"The canals tunnel through hills"	8
Government sawmill in Arizona	8
A cabbage farm near Phœnix, Arizona	9
Site of the Pathfinder Dam	9.
Relief map of the Lower Colorado River	9
Indians building a road to the Roosevelt Dam, Arizona	9
Moving camp, U. S. Reclamation Service	9
Tunnel made by engineers through a granite mountain before beginning work on the	
Shoshone Dam	99
In Arizona	100
Twin towers of the Cliff Dwellers in New Mexico	102
A round-up on the Sierra Bonita Ranch, Willcox, Arizona	102
One of the streams of the Isle of Pines	106
A Spanish laurel; Isle of Pines	107
The Sultan of Morocco	100
Coast Survey party loading outfit into canoes 11/4 miles from shore, Yukon, Alaska	IIC
Map of Alaska showing unexplored areas in 1905	112
A company of Norwegian soldiers	113
Industrial conditions in Rangoon, Burma	115
Native boy orchestra in Garoet, Java	115
View of Tangier	123
Dar El Beit, the treasury in the fortress at Tangier	124
Saints' shrines at Tangier	125
Moorish saint	126
Peasant Berber woman and child	127
Market day	128
Main street of Tangier	120
The gateway of Bab El Fhas, with the Kasbah or fortress of Tangier in the back-	
ground	130
Laab El Barnd or powder play, Tangier	131
The entrance to Tangier through arches of the custom-house	132
Crossing a stream in Morocco near Fez	133
One of Raisuli's men—a Berber	134
A typical Moor of Tangier	134
A Soudan minstrel	135
Peasant girl and water vendor at Tangier	135
A type general throughout Morocco and its neighbor Algeria	136
A Moorish belle	137
Aidonia, the summer residence on the Spartello Headland of Ion Perdicaris	138
View in the grounds of Aidonia	139
The British consul at Tangier and Kaid, Sir Harry Maclean	140
Remains of a Roman bridge not far from Tangier	141
A group of camels passed on the way to Tsarradan	142

ILLUSTRATIONS	IX
	Page
A waterwheel driven by a donkey on the road to Tsarradan	143
Encampment of migratory shoemakers outside of Tangiers	144
Moorish women at the spinning-wheel waited on by a slave	145
Courtyard of a Moorish residence in Fez	146
Photograph of a skeleton of Pariasaurus. 2. Photograph by Professor Amalitzkyon on larger scale of a skull of a Pariasaurus. 3. Skeleton of a huge carnivorous beast of prey. 4. Skull of the gigantic theromorph carnivorous reptile	171
One of the nodules, showing form of the embedded skeleton	173
Condition of American case goods on arrival at Tientsin, China	174
Trusses of American piece goods on arrival at Tientsin, China	174
Bales of piece goods from Holland on arrival at Tientsin	175
A typical pile of American piece goods on arrival at Tientsin	175
Disembarking passengers, Portugese East Africa	177
Monument erected to the man who first introduced citrus fruits into Japan	182
plants for Florida streams	185
A Durum wheat field at the New Mexico experiment station	186 188
culture	191
Packing figs in a Smyrna fig establishment	192
flowers	193
An Arab climbing a tall palm in a garden at Biskra, Algeria, to pollinate the flowers The mangosteen, queen of the tropical fruits. One-half natural size. 2. The beginning of the government's date garden in California. 3. A young imported Mulgoba mango tree in Florida. 4. A basketful of Japanese Loquats as sold in the markets of Malta.	195
5. A young California date palm loaded with fruit	196
Original appearance of salt lands	198
Appearance of the same salt lands two years after planting of berseem	199
island of Zante, Greece	200
General features of the plans for the airship of the Wellman Chicago Record-Herald Polar expedition	206
Plans of the airship of the polar expedition	210
Diagram showing effect of wind on airship	216
Diagram showing method of operating retardateur cable	217
Diagram showing method of suspension and operation of retardateur cable	217
Panaman corn farm	220

# X THE NATIONAL GEOGRAPHIC MAGAZINE

	Page
Farm of Albredo Aleman, Panama	. 23
Panaman mango	
Panaman cattle	
Orange tree, six years old, Panama	
A group of Highland cattle on the farm of Mr. W. M. Van Norden, Rye, New York	
The wonderful salt deposit in the little-known Athabasca district of Northern Alberta.	
Walter Wellman	
Russian chapel after the earthquake, Andijan	
A Kashgar crowd	
A Samarcand Jewess in ceremonial attire	
Map showing British Empire in Africa	
Plowing land which has been baked by the sun	
Egyptian bride going in state to her new home	
Dahabeahs of the Nile. 2. Avenue of the Sphinxes, Luxor. 3. Street scene, Omdur-	
man. 4. Temple of Isis, Philæ	
A water-carrier, Khartum	
A fruit-seller, Omdurman	
Bank of the Blue Nile below Khartum. 2. Arab suburbs, Khartum. 3. Bisharin Arabs,	
Omdurman. 4. Kasr el Nil bridge, Cairo	
Arrival of the Kodofan camel train, Omdurman. 2. Grand Hotel, Khartum. 3. Watch-	
ing the polo players, Omdurman. 4. Between Blue and White Niles, Khartum	251
Girls at Omdurman	252
Raising water from the Nile by means of the shadoof	253
Raising water from the Nile by means of the Archimedean screw; interior construc-	
tion at right	254
A cobbler on the street, Khartum	255
Palace of the Sirdar, Khartum	256
Gordon statue, Khartum	256
A Sudanese policeman, Khartum.	257
A parade of the Shillook Regiment in honor of Princess Beatrice, Khartum	258
Shillook warriors	259 260
Group of convicts, Fashoda	260
Types of natives	261
General view of Tewfikieh.	262
One thousand miles up the Nile from Khartum	263
Nearing the Equator. A village scene at Bor	264
The mail leaving Lado for stations in the Congo Free State	266
The Yukon River breaking up	268
Picture taken at Fort Gibbon in October.	260
Another taken from the same point on the 23d of May	260
The bank of the Yukon at Fort Cibbon being piled high with ice	270
Immense chunks forced by their fellows far up on the bank	270
Destruction wrought by the ice flow.	271
A street in Naples	273
Naples and Vesuvius	274
Houses in Naples	275
A street in Pompeii	276
A view of Amalfi	277
	278
	279

#### ILLUSTRATIONS XI Page Outline map of San Francisco Bay and vicinity..... A typical quarry exposure of sandstone beds in the Franciscan series... Map of the San Francisco Peninsula. 287 Curious pillow structure in basalt ..... An outcrop of Miocene strata on the coast of California..... 290 White oaks on Piajo Creek.... 291 Record of the San Francisco earthquake.... 292 The seismograph of the U. S. Weather Bureau..... The San Francisco earthquake.... 294 Map showing cotidal lines for the world (8 by 14 inches).......................Supplement Chart showing systems of semi-diurnal tide..... 305 Diagram showing cotidal lines for the Mediterranean Sea.... Diagram showing cotidal lines for the Gulf of St. Lawrence..... A garden at Eagle, Alaska..... Sail car on Church's Island, N. C. Map of sand reefs along the North Carolina coast.... 311 Shackleford sandwave advancing on forest.... 312 Windmill on Harker's Island, N. C.... 312 Forest covered by Shackleford sandwave..... The wreck of the "Priscilla".... Cemetery on Hatteras Island, N. C..... 314 Wreckage above Hatteras.... Palmettos on Smith's Island, N. C..... 315 316 Making fishing nets..... 317 Looking down into the new crater of Vesuvius..... The cauliflower cloud from above Vesuvius.... The ruins of Boscotrecase, 1906..... A pine tree overwhelmed by lava, Boscotrecase..... The ruins of Ottajano, 1906..... The new cone of Vesuvius.... A difficult bit of rock climbing..... Sunken area on Market Street near the Ferry Building..... 326 A fissure opened by the earthquake on East Street..... 327 An "earthquake wave" at Seventh Street and Missouri Avenue, at the corner of the new U. S. post-office.... The city hall..... Scenes at Leland Stanford, Jr., University..... Scenes at Leland Stanford, Jr., University..... Scenes at Palo Alto..... The two spires of St. Dominic.... Looking down Pine Street.... Looking east from Jones Street.....

Nob Hill from Van Ness and Washington Streets....

St. Francis Hotel.337The Commercial High School.338Montgomery Street from Market Street.339The remains of the California Hotel.340

336

# XII THE NATIONAL GEOGRAPHIC MAGAZINE

	Page
The custom-house, corner of Washington and Battery Streets	34
Camping out in Jefferson Square	
San Francisco getting fed	
A Zulu and his ten wives	
Zulu workmen of the diamond mines	
De Beers compound	
Swimming bath, De Beers compound	-
Zebras	349
A diamond thief	350
Miners going to work	351
Traction engine for harrowing blue ground	352
Washing machine	353
The old method of separating the diamonds	354
Automatic diamond sorter	355
Map showing location of the principal river stations maintained in the United States	357
The approach to Saracen's tent	359
The organ and chimes in the cathedral	360
Stalactites in Luray Cave	361
Flashlight. Wild cat or Lynx	366
Flashlight. Boat rigged for night hunting with cameras	368
Flashlight. Large doe and yearling buck	369
Flashlight. Elk naturalized on shore of Lake Superior	370
Flashlight. Young bull elk	371
Flashlight. Red deer, Canada	372
The hunter's victim	373
Deer taking its own picture	374
The author's camp	375
Flashlight. "Monarch of the night"	376
Flashlight, Deer and porcupine	377
Flashlight. "Innocents abroad." Doe and twin fawns	378
Flashlight. Spike horn buck	379
Flashlight. A victim of the gray wolves	380
Flashlight. Lake Matagamasing, Canada	381
Flashlight. "Hark!"	382
Flashlight. Doe	383
Flashlight. "Midnight reflections	384
Flashlight. "Has he gun or camera"	385
Flashlight. "A midnight wader"	386
Flashlight. Doe	387
Flashlight. Porcupine invades houseboat	388
Yellow hammer or flicker at nesting hole	-
The great white heron	390
"Dignity personified"	391
Young pelicans protesting against the camera	392
Flashlight of pelican on nest	393
Pelican Island, Indian River, Florida	393
	394
The little blue heron in the white or immature age	395
Osprey or fish hawk flying over nest	396
Mallard duck on nest	397
Eggs of the herring gull just hatching	398
Young herring gull out of the shell five minutes	398

#### ILLUSTRATIONS

XIII

Young herring gull. Young crow blackbirds. Willett snipe's nest. Four hundred egg	gs
of the black-headed gull	. 39
The egg of a Phœbe (flycatcher) and seven consecutive days' growth of young (life size	
The bird left the nest on the eleventh day	
Avocets flying over Henry's Lake, Idaho	. 40
Stilts, Henry's Lake, Idaho	
Young sandhill crane	
Butterflies feeding on a dead pickerel	
Flashlight. Coon taking his own picture	
Flashlight. Coon taking his own picture	
Combined daylight and flashlight of a porcupine feeding on pond lilies	
Flashlight. Albino porcupine pictured on four successive seasons in same bay	. 40
Young night heron	. 41
A blue-haired quilless porcupine	
Mocking bird in Florida orange grove	
Cedar bird	
Black-headed gull	
Yellow-leg snipe	
Great Northern hare	
Wing shooting with a camera. Robin snipe	
Bonaparte gulls	
Broad-bill duck	
Snipe-shooting over decoys	
Flashlight. Great blue heron asleep	418
Flashlight. Snowy owl	
Flashlight. Bull moose	-
Flashlight. Cow moose	
Flashlight. Bull moose	
Map of South America (8 by 11 inches)Supplement	
Arequipa, the chief city of southern Peru	
Peruvian station of Harvard College Observatory, near Arequipa	434
Group of Llamas and their Indian drivers	435
Lake and glacier in the Aricoma Pass of the eastern Andes	
Mule trail of the Inca Mining Company, eastern slope of the Andes	
Among the eastern foothills of the Andes	438
A rubber tree	441
A camp in the "rubber country"	442
Curing rubber by smoking it. A native hut, eastern Peru	443
Natives living on the Tambopata River, a tributary of the Amazon	444
The Peruvian military camp near the River Madre de Dios	445
A group of Chuncho savages on the bank of the Tambopata	447
Cacao or chocolate trees, Ecuador	451
The River Iguazu, where three republics meet	457
General view of the Falls of Iguazu, from the Brazilian side of the river	458
An old timer	459
San Ignacio	460
Gypsy moth caterpillars beneath burlap	460
Various forms of the gypsy moth	461
Noodland stripped by gypsy moths	462
Dead pines. Stripped by gypsy moths	463
Temale brown-tail moths laying eggs on cherry	464

#### XIV THE NATIOUAL GEOGRAPHIC MAGAZINE

	Page
The obelisk of Pelée	466
The obelisk of Pelée	467
The shattered obelisk of Pelée	469
The dome of Pelée	470
The shattered obelisk of Pelée	471
Death Valley from summit of Grapevine Range	482
Map of Death Valley region, Nevada	486
The combination mill at Goldfield. 2. Traveling by coach through the desert. 3. Giant	
yucca or Joshua tree. 4. Silverbow, a new camp	489
Marble Canyon	490
Plateau in great dry area, southern end of Belted Range	.493
Shelter camp in great dry desert	494
In Death Valley	496
Chart showing number of neat cattle on farms and ranges	512
Chart showing number of swine on farms and ranges	513
Herd of cattle on the Summer Range	515
A half mile of pork	516
A thriving family	518
The modern method of sheep shearing with the aid of clipping machines	519
Band of four thousand wethers	520
Sheep Ranch near Billings, Montana	522
Second-year young of snapping turtle	525
Egg deposits of snapping turtle covered with wire baskets	526
The Demé-ranchu	527
Varieties of gold-fish (from Japanese paintings)	528
Culture pearls	530
Terraces of vineyards on the Rhine, near Bingen	532
Map of Cuba (12 by 24 inches)Supplement	
Climbing the Royal palm	543
	544
	545
0.111 1 1.36	546
	547
7	548
	549
4	550 551
	552
1 / 11 1	553
	554
	555
	556
Destitute children employed in street cleaning at Guanabacoa	557
Reform school for boys of Cuba, Guanajay, Cuba	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	559
1 77 1 0 0	560
	561
	562
	563
lative colored family	564
	565

ILLUSTRATIONS	XV
	Page
Municipal Hospital No. 1, Habana, Cuba	
Ostriches five days old	-
Young ostriches, California	
Ostriches five months old	
Full grown bird at ostrich farm	572
Plucking an ostrich	
At Los Angeles, California	574
The faithful fuel carriers of Korea	576
Placer gold mining in Korea	577
Boys who gather grass for fuel. 2. Dead child tied to tree	578
An interesting chess problem	579
Women's correct street costume in Korea.	581
First and second courses of wood covered with lump clay. 2. Pile of wood and clay	a0.
Completed and firing begun in one of the flues	-
	585
Making sketches during eclipse	591
Gibraltar. 2. U. S. S. Dixie.	592
	595
A Spanish bull fight. 2. The rock of Gilbraltar	596
Eclipse instruments, Guelma	598 600
Eclipse party at Guelma.	602
Camp at Daroca. 2. Eclipse party at Daroca, Spain	603
Deck of the Minneapolis during eclipse.	604
"The Gates of Heaven"—Porta Coeli, Spain.	605
Spanish mendicant	606
Spanish school	607
Visitors at Porta Coeli	609
The Three Guardsmen. 2. Spanish-Amercian Complications. 3. Interested visitor.	
4. Spanish-Amercian Alliance	610
Composite drawing from photographs of the corona	613
Village scene in Ceylon.	614
One of the dagobas at Anuradhapura	615
Resting place of the right collar-bone of Buddha	616
A view of the steps shown in the preceding picture	617
One of the ancient bathing places, Anuradhapura	618
The threshold of one of the bathing places, Anuradhapura	619
The Rock Temple, Ceylon	620
	621
View in La Guaira	623
Street scene in Caracas	624
	626
A coffee mill near Maracaibo	627
	628
A Maracaibo "Caballero"	629
A Venezuelan abattoir	630
	633
	634
	635
Country road near La Guaira	636
Commander Robert E. Peary, U. S. N	639

### XVI THE NATIONAL GEOGRAPHIC MAGAZINE

	Pag
Mat Henson	
A polar bear hunt	
Musk oxen. Sledding supplies to the land	64
Captain Sam Bartlett	64
Herbert L. Bridgman	
An Eskimo child. Eskimo man and wife	64
Wild elephants led by tame ones crossing the river, advancing nearer and nearer to the	
kraalkraal	67
Driving wild elephants across river to kraal at Ayuthia	67
Wild elephants entering the kraal	67
Wild elephants trying to enter the inner kraal	67
Tame elephants assisting to raise the injured elephants	678
About 250 wild elephants at peace in the kraal	679
Setting out to capture the elephants	680
The first young tusker captured and roped by the hind leg	68
Leading out a captured elephant	682
His Majesty the King taking photos during the hunt at the kraal	68
Preparing to hunt outside of the kraal	684
Ayuthia—elephant herd	686
Wild elephants taking a bath in the stream, surrounded by a cordon of tame elephants.	687
Wild elephant broken away and fighting tame elephant	688
The King at corner of royal box choosing an elephant	689
The King and suite leaving the kraal after the hunt	690
Natives fording canal on their way home after the hunt	691
Secretary of State Root and the committee of reception at Cartagena, Colombia, Septem-	-
ber 24, 1906	693
Hand propelled freight boat for shallow tributaries of Magdalena	695
Grand procession in Bogota, on the occasion of the feast of Corpus Christi	696
Small river steamer for tributaries and canals of Magdalena River	697
Bogota is situated at the foot of the mountains on a high plateau	698
Señor Don E. Cortes, Minister of Colombia	700
General Reyes, President of Colombia	700
A scene in Colombia on the upper waters of the river Magdalena	702
On the mule road to Bogota	703
Street scene in Bogota	704

